

U. S. DEPARTMENT OF COMMERCE

HENRY A. WALLACE, Secretary

NATIONAL BUREAU OF STANDARDS

E. U. CONDON, Director

# COTTON FABRIC TENTS TARPAULINS, AND COVERS

(Second Edition)

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COMMERCIAL STANDARD CS28-46

(Supersedes CS28-32)

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Effective Date for New Production from April 15, 1946



A RECORDED VOLUNTARY STANDARD  
OF THE TRADE

UNITED STATES  
GOVERNMENT PRINTING OFFICE  
WASHINGTON : 1946

**PROMULGATION**  
of  
**COMMERCIAL STANDARD CS28-46**  
for  
**COTTON FABRIC TENTS, TARPAULINS, AND  
COVERS**  
(Second Edition)

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On December 12, 1930, at the instance of the National Tent and Awning Manufacturers Association, Inc. (now National Canvas Goods Manufacturers' Association, Inc.) a general conference of manufacturers, distributors, and users of cotton fabric tents, tarpaulins, and covers adopted a recommended commercial standard for these commodities, which was subsequently accepted by the trade and promulgated as Commercial Standard CS28-32.

At the request of the above-mentioned association, and with the approval of the standing committee, the standard was revised to include marking as to size. The revision has since been accepted by the trade for promulgation through the National Bureau of Standards.

The standard is effective for new production from April 15, 1946.

Promulgation recommended.

**F. W. Reynolds,**  
*Acting Chief, Division of Trade Standards.*

Promulgated.

**E. U. Condon,**  
*Director, National Bureau of Standards.*

Promulgation approved.

**Henry A. Wallace,**  
*Secretary of Commerce.*

# COTTON FABRIC TENTS, TARPAULINS, AND COVERS

(Second Edition)

## COMMERCIAL STANDARD CS28-46

### PURPOSE

1. *Treated goods*.—As the use of indefinite and misleading markings and descriptions on treated fabric tents, tarpaulins, and covers for type, weight, and size works an injustice and is misleading to the buying public, the industry desires to eliminate this practice and arrange in place thereof a definite standard method of marking that will be clear to both buyer and seller.

2. *Untreated goods*.—Further, as the use of indefinite markings and descriptions on untreated fabric tents, tarpaulins, and covers for type, weight, and size is so often misleading to the tent or cover buyer, the industry desires to eliminate this practice and arrange in place thereof a definite standard method of marking that will be clear to both buyer and seller.

### SCOPE

3. This commercial standard provides the basis and method of marking the type, weight, and size of cotton fabric tents, tarpaulins, and covers, either treated or untreated. It also illustrates the manner in which manufacturers and distributors may label their products to show compliance with the commercial standard.

### DEFINITIONS

4. *Treated*.—For the purposes of this standard, the term “treated” means subjected to any process applied either to a finished tent, tarpaulin, or cover, or to the fabric thereof, to render it less penetrable to water, or more resistant to fire, weather, or mildew.

5. *Cover*.—For the purposes of this standard the term “cover” refers to articles such as floor coverings, truck covers, drop cloths, automobile covers, furniture covers, refrigerator covers, awnings, or any other type of cover that is sold under two dimensions or made to size to fit a definite object.

6. *Tent*.—For the purposes of this standard the term “tent” applies to all standard tents such as wall tents, umbrella tents, lean-to, house tents, Boy Scout tents, pup tents, children’s play tents, crawl-ins, decorative tents, and special tents made exclusively by manufacturers under design patents.

7. *Cut size*.—For the purposes of this standard, the term “cut size” means the size of the tent, tarpaulin, or cover before the making of its seams, hems, or reinforcement turn-overs.

## REQUIREMENTS

### 8. *Marking weight.*

8a. *Grey goods.*—With the exception of children's play tents, crawl-ins, and decorative tents, all treated and untreated cotton fabric tents, tarpaulins, and covers shall be marked by stenciling directly on the goods or by sewing in a printed label to show the original grey goods weight in ounces per square yard. Such ounce weight designation shall be shown to the nearest 1/100 ounce. (See table 1 and conversion tables.)

TABLE 1.—*Examples of standard marking*

Mill designation weight, grey goods, 29-inch basis (29 by 36 inches)	Recommended marking standard weight, grey goods, per square yard
<i>Ounces</i>	<i>Ounces</i>
7	8.69
8	9.93
10	12.41
12	14.90

8b. *Type of fabric.*—With the exception of children's play tents, crawl-ins, and decorative tents, all treated and untreated cotton fabric tents, tarpaulins, and covers shall also be marked by stenciling or a sewed-in printed label to show the commercial type of fabric, as "single-filling duck", "double-filling duck", "army duck", "numbered duck", "sheeting", "osnaburg", "drill", and any other fabrics that may be used. (See nomenclature.)

8c. *Finished fabric.*—No marking or sales description shall be used referring to the finished or loaded weight after treatment of, or the amount of waterproofing material contained in tents, tarpaulins, or covers, which creates or tends to create confusion or deception in the merchandising of these products.

8d. *Width.*—No marking or sales description of untreated fabric covers and tents shall be used for the weight of the fabric which refers to any other than 36-inch width, regardless of the width actually used in the tent or cover.

8e. *Play tents, crawl-ins, and decorative tents.*—Whenever play tents, crawl-ins, or decorative tents are marked or otherwise described to indicate the weight or type of fabric, such markings or descriptions shall conform with the requirements of paragraphs 8a and 8b, respectively.

9. *Weight tolerance.*—The weight tolerance shall be in accordance with approved commercial practice.

10. *Used goods.*—Treated and untreated tents, tarpaulins, and covers made from second-hand or used materials shall be properly designated by label or tag—"Second-hand" or "Used Fabric."

### 11. *Marking size.*

11a. *Tarpaulins and covers.*—With the exception of automobile covers, furniture covers, refrigerator covers, awnings, or any other type of cover which is made to size to fit a definite object, each tar-



paulin or flat cover shall be so marked as to disclose plainly the cut size and minimum finished size at the time of the completion of manufacture thereof. The cut size shall be disclosed in immediate conjunction with the minimum finished size aforesaid, and shall not be disclosed more conspicuously than the said minimum finished size.

11b. *Tents*.—With the exception of children's play tents, crawl-ins, decorative tents or special tents made exclusively by manufacturer under design patents, tents shall be so marked as to disclose plainly the cut and minimum finished dimensions, at the time of the completion of manufacture, of width and length, and the finished dimension of the center height, or such dimensions as will accurately disclose the size of the tent. If any dimensions are given in addition to those herein mentioned, such dimensions shall be the minimum finished dimensions only.

11c. *Shrinkage*.—Those products which are described or labeled as to size shall disclose the following statement immediately in conjunction with, and as conspicuously as, the minimum finished size: "Products made of canvas are subject to shrinkage due to variable climatic conditions."

### LABELING

12. *Guarantee*.—In order to assure the purchaser that he is receiving a tent, tarpaulin, or cover marked in conformity with the requirements of this standard, tents, tarpaulins, and covers shall be accompanied by a certificate, tag, card, or other label incorporating the following wording:

This article is marked in accordance with Commercial Standard CS28-46 as issued by the National Bureau of Standards of the U. S. Department of Commerce.

The weight per square yard in the grey goods (before treating), type of fabric, and size are as follows:

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 (Name of manufacturer or distributor)

13. *Example*.—The following illustrates the manner in which the space in the above label is to be filled in by the manufacturer:

"12.41-oz Double-Filling Duck.

Cut size: 8' by 10'.

Minimum finished size at the time of completion of manufacture:

7'6" by 9'6".

Products made of canvas are subject to shrinkage due to variable climatic conditions.

JOHN DOE Co."

### NOMENCLATURE

14. *Drill*.—A commercial term for a fabric with warp-face twill. Usually constructed with single yarn in both warp and filling and woven in such a way as to produce in the face of the fabric a slight diagonal wale or rib. Generally woven two up, one down, 24 to 72 inches wide, 4 to 9 ounces per square yard.

15. *Duck*.—A closely woven, firm, heavy, plain-weave fabric.

15a. *Army duck*.—Warp and filling each consisting of two or more yarns twisted together, made principally in weights of 7, 8, 9, 10, 12, and 15 ounces to a width of 28½ inches.

15b. *Double-filling duck*.—Warp consisting of single yarns, sized, with two yarns woven as one (not twisted); filling consisting of two or more yarns twisted together; made principally in weights as follows:

7, 8, 9, 10, and 12 oz.....	29 inches wide.
10 and 12 oz.....	36 inches wide.
10 and 11 oz.....	40 inches wide.

15c. *Single-filling duck*. Warp consisting of single yarns, sized, with two yarns woven as one (not twisted); with filling of single yarns; made principally in weights, as follows:

6, 7, 8, 9, 10, and 12 oz.....	29 inches wide.
8, 10, and 12 oz.....	36 inches wide.
10 and 11 oz.....	40 inches wide.

15d. *Enameling duck*.—Single- and double-filling duck in special weights, made principally in widths of 38, 46½, 51½, 61, 72, 84, and 90 inches.

15e. *Flat duck*.—A name often applied to both single- and double-filling ducks owing to the method of weaving two warp yarns side by side as one.

15f. *Numbered duck (sail and wide duck)*.—Warp and filling each consisting of two or more yarns twisted together. The number of numbered duck is based on the computation: Number of duck equals 19 minus weight in ounces per linear yard 22 inches wide. When the weight per linear yard exceeds 19 the number is indicated as follows: 19 ounces per linear yard is numbered 1/0, 20 ounces is 2/0, etc.

15g. *Wagon-cover duck*.—Single- and double-filling duck, made principally in widths of 48, 54, 60, 66, 72, 84, and 90 inches, in weights based upon 8, 10, and 12 ounces to 29-inch width.

16. *Jean*.—A commercial term for a fabric with warp-face twill like a drill, but with higher count and finer yarns. When the fabric is examined face up with one selvage on the left and the other on the right, on a jean drill the direction of the diagonal wale or rib is upward to the left.

17. *Osnaburg*.—A coarse, open, plain-weave fabric of yarns from 3's to 12's, weight 4 to 14 ounces per square yard, threads per inch approximately 20 to 40 warp and 20 to 38 filling.

18. *Sheeting*.—A light or medium weight plain-weave fabric of single yarns from 12's to 30's.

## CONVERSION TABLES

TABLE 2.—*Numbered cotton duck*

Mill designation number <sup>1</sup>	Recommended marking standard weight, grey goods, per square yard
	<i>Ounces</i>
2/0	32.73
1/0	31.09
1	29.45
2	27.82
3	26.18
4	24.55
5	22.91
6	21.27
8	18.00
10	14.73
12	11.45

<sup>1</sup> These numbers conform to Simplified Practice Recommendation R27-36.TABLE 3.—*Army duck*

Mill designation weight, grey goods, 28½-inch basis (28½ by 36 inches)	Recommended marking standard weight, grey goods, per square yard
<i>Ounces</i>	<i>Ounces</i>
6	7.58
7	8.84
8	10.11
9	11.37
10	12.63
11	13.89
12	15.16
15	18.95

TABLE 4.—*Single-filling and double-filling duck*

Mill designation weight, grey goods, 29-inch basis (29 by 36 inches)	Recommended marking standard weight, grey goods, per square yard
<i>Ounces</i>	<i>Ounces</i>
6	7.45
7	8.69
8	9.93
9	11.17
10	12.41
11	13.66
12	14.90
15	18.62

TABLE 5.—Drill

Mill designation, grey goods		Recommended marking standard weight, grey goods, per square yard
Width	Weight linear yards per pound	
<i>Inches</i>		<i>Ounces</i>
30	4.00	4.80
30	3.25	5.91
30	3.00	6.40
30	2.85	6.74
30	2.50	7.68
34	4.75	3.57
37	3.95	3.94
37	3.50	4.45
37	3.25	4.79
37	3.00	5.19
37	2.75	5.66
37	2.35	6.63
37	2.00	7.78

TABLE 6.—Sheeting

Mill designation, grey goods		Recommended marking standard weight, grey goods, per square yard
Width	Weight linear yards per pound	
<i>Inches</i>		<i>Ounces</i>
31	5.00	3.72
31	4.50	4.13
32	6.25	2.88
36	6.50	2.46
36	6.15	2.60
36	5.50	2.91
36	5.00	3.20
36	4.70	3.40
36	4.25	3.76
36	4.00	4.00
36	3.50	4.57
36	3.25	4.92
36	3.00	5.33
36	2.85	5.61
37	4.00	3.89
37	3.50	4.45
40	5.50	2.62
40	5.00	2.88
40	4.23	3.40
40	4.00	3.60
40	3.75	3.84
40	3.60	4.00
40	3.15	4.57
40	2.85	5.05
40	2.50	5.76



TABLE 7.—Osnaburg

Mill designation, grey goods			Recommended marking stand- ard weight, grey goods per square yard
Width	Weight		
	Linear yards per pound	Per linear yard	
<i>Inches</i>		<i>Ounces</i>	<i>Ounces</i>
30	2. 29	7	8. 38
36	2. 29	7	6. 99
36	3. 90	-----	4. 10
40	2. 29	7	6. 29
40	3. 50	-----	4. 11

## EFFECTIVE DATE

19. The standard is effective for new production from April 15, 1946.

## STANDING COMMITTEE

20. The following individuals comprise the membership of the standing committee, which is to review, prior to circulation for acceptance, revisions proposed to keep the standard abreast of progress. Each organization nominated its own representative. Comment concerning the standard and suggestions for revision may be addressed to any member of the committee or to the Division of Trade Standards, National Bureau of Standards, which acts as secretary for the committee.

J. E. DILG (chairman), Dougherty Brothers Tent & Awning Co., 6303 South Broadway, St. Louis 11, Mo.  
 RAY H. BRYAN, Acting Director of Engineering, Division of Operations, National Council Offices, Boy Scouts of America, 2 Park Avenue, New York 16, N. Y.  
 WALTER B. EAGAN, Brook Tarpaulin Co., 429 Celeste Street, New Orleans, La. Representing National Association of Purchasing Agents.  
 CHARLES K. EVERETT, Director of Merchandising, Cotton-Textile Institute, Inc., 320 Broadway, New York 7, N. Y.  
 JAS. E. HOOPER, Vice President, Wm. E. Hooper & Sons, 3502 Parkdale Avenue, Woodberry, Baltimore, Md.  
 S. T. JESSOP, President, United States Tent & Awning Co., 2315 West Huron Street, Chicago 12, Ill.  
 LIEUT. COL. S. J. KENNEDY, Quartermaster Corps, Army Service Forces, War Department, Second and Q Streets SW., Washington 25, D. C.  
 G. P. LOCKER, Metropolitan Building Co., 1201 Fourth Avenue, Seattle 1, Washington. Representing National Association of Purchasing Agents.  
 LAURA E. PRATT, Technical Laboratories, Department 817, Sears, Roebuck & Co., Chicago 7, Ill. Representing National Retail Dry Goods Association.  
 GEORGE B. REID, American Waterproofing Co., 3200 Beckman Street, Cincinnati, Ohio. Representing Canvas Waterproofers Association.  
 WILLIAM E. RUSSELL, President, Capital Awning Co., 1503 North Capitol Street, Washington 2, D. C.  
 I. P. SMITH, President, The Hettrick Manufacturing Co., Summit and Magnolia Streets, Toledo, Ohio.  
 C. J. STIND, Department 606, Sears, Roebuck & Co., Homan and Arthington Streets, Chicago 7, Ill. Representing Mail Order Association of America.  
 HERBERT A. EHRLMAN (secretary), Division of Trade Standards, National Bureau of Standards, Washington 25, D. C.

## HISTORY OF PROJECT

21. Pursuant to a request from the National Tent and Awning Manufacturers Association (National Canvas Goods Manufacturers' Association, Inc.) a general conference was held at the National Bureau of Standards on December 12, 1930, to consider the adoption of a commercial standard for cotton fabric tents, tarpaulins, and covers. Previously, waterproofers had met at the Department of Commerce on June 7, 1929, and at Memphis, Tenn., on October 6, 1930. A committee of waterproofers and tent manufacturers had met on March 21, 1930, at St. Louis, Mo.

22. The resolutions as adopted by the Canvas Waterproofers Association on October 6, 1930, state, in effect, that waterproofed fabric tents, tarpaulins, and covers be marked to show the weight of the grey goods in ounces per square yard to the nearest one-hundredth of an ounce. These were presented to the NTAMA on October 7, 1930, were adopted in modified form by that association the next day, and later were submitted to the National Bureau of Standards as a proposed commercial standard.

23. Following minor adjustments, the inclusion of an appendix covering nomenclature and definitions prepared under the auspices of the Cotton Textile Institute, Inc., and conversion tables at the general conference, the revised draft was subsequently accepted by a satisfactory majority of the trade and promulgated as CS28-32, effective for new production and clearance of existing stocks from January 1, 1932.

24. *First revision.*—A revision of the standard to include the marking of tents, tarpaulins, and covers to indicate the cut and the finished size at time of completion of manufacture was approved by the Board of Directors of the National Canvas Goods Manufacturers' Association, Inc., on January 29, 1944. A revised draft containing this recommendation as modified and approved by the standing committee, was accepted by a large majority of production by volume of tents, tarpaulins, and covers and announcement of the effective date of the revision, CS28-46, was issued on March 15, 1946.

## APPENDIX

25. The standard contemplates that the retraction of and shrinkage in the fabric are compensated for when the fabric is cut and that retraction of the fabric has occurred before the cut pieces are sewed into the finished article. Therefore, normally, the dimensions placed on the article at the time of completion of its manufacture will be the dimensions at a later date. However, because of the variable nature of such fabric shrinkages, the manufacturers find it impracticable to guarantee that the dimensions of the article when purchased by the ultimate user will comply exactly with the dimensions at the time of completion of manufacture as stenciled thereon or stated on a label attached thereto.

## ACCEPTANCE OF COMMERCIAL STANDARD

If acceptance has not previously been filed, this sheet properly filled in, signed, and returned will provide for the recording of your organization as an acceptor of this commercial standard.

Date\_\_\_\_\_

Division of Trade Standards,  
National Bureau of Standards,  
Washington 25, D. C.

Gentlemen:

We believe that the Commercial Standard CS28-46 constitutes a useful standard of practice, and we individually plan to utilize it as far as practicable in the

Production <sup>1</sup>                      Distribution <sup>1</sup>                      Purchase <sup>1</sup>                      Testing <sup>1</sup>

of cotton fabric tents, tarpaulins, and covers.

We reserve the right to depart from it as we deem advisable.

We understand, of course, that only those articles which actually comply with the standard in all respects can be identified or labeled as conforming thereto.

Signature of authorized officer\_\_\_\_\_

(In ink)

(Kindly typewrite or print the following lines)

Name and title of above officer\_\_\_\_\_

Organization\_\_\_\_\_

(Fill in exactly as it should be listed)

Street address\_\_\_\_\_

City, zone, and State\_\_\_\_\_

<sup>1</sup> Underscore which one. Please see that separate acceptances are filed for all subsidiary companies and affiliates which should be listed separately as acceptors. In the case of related interests, trade associations, trade papers, etc., desiring to record their general support, the words "General support" should be added after the signature.



## TO THE ACCEPTOR

The following statements answer the usual questions arising in connection with the acceptance and its significance:

1. *Enforcement.*—Commercial standards are commodity specifications voluntarily established by mutual consent of those concerned. They present a common basis of understanding between the producer, distributor, and consumer and should not be confused with any plan of governmental regulation or control. The United States Department of Commerce has no regulatory power in the enforcement of their provisions, but since they represent the will of the interested groups as a whole, their provisions through usage soon become established as trade customs, and are made effective through incorporation into sales contracts by means of labels, invoices and the like.

2. *The acceptor's responsibility.*—The purpose of commercial standards is to establish for specific commodities, nationally recognized grades or consumer criteria and the benefits therefrom will be measurable in direct proportion to their general recognition and actual use. Instances will occur when it may be necessary to deviate from the standard and the signing of an acceptance does not preclude such departures; however, such signature indicates an intention to follow the commercial standard where practicable, in the production, distribution, or consumption of the article in question.

3. *The Department's responsibility.*—The major function performed by the Department of Commerce in the voluntary establishment of commercial standards on a Nation-wide basis is fourfold: first, to act as an unbiased coordinator to bring all interested parties together for the mutually satisfactory adjustment of trade standards; second, to supply such assistance and advice as past experience with similar programs may suggest; third, to canvass and record the extent of acceptance and adherence to the standard on the part of producers, distributors, and users; and fourth, after acceptance, to publish and promulgate the standard for the information and guidance of buyers and sellers of the commodity.

4. *Announcement and promulgation.*—When the standard has been endorsed by a satisfactory majority of production or consumption in the absence of active, valid opposition, the success of the project is announced. If, however, in the opinion of the standing committee or the Department of Commerce, the support of any standard is inadequate, the right is reserved to withhold promulgation and publication.



## ACCEPTORS

26. The organizations listed below have individually accepted this standard for use as far as practicable in the production, distribution, testing, or purchase of cotton fabric tents, tarpaulins, and covers. In accepting the standard they reserved the right to depart therefrom as they individually deem advisable. It is expected that articles which actually comply with the requirements of this standard in all respects will be regularly identified or labeled as conforming thereto, and that purchasers will require such specific evidence of conformity.

ASSOCIATIONS  
(General Support)

American Wholesale Canvas Goods Manufacturers Association, St. Louis, Mo.  
Associated General Contractors of America, Inc., The, Washington, D. C.  
Canvas Goods Manufacturers Association, Ventnor City, N. J.  
Cotton-Textile Institute, Inc., The, New York, N. Y.  
Hospital Bureau of Standards & Supplies, Inc., New York, N. Y.  
Middle Atlantic Canvas Goods Manufacturers Association, Philadelphia, Pa.  
National Canvas Goods Manufacturers Association, Inc., St. Paul, Minn.

## FIRMS

Abbott Canvas Co., Chicago, Ill.  
Abercrombie & Fitch Co., New York, N. Y.  
Acme Canvas & Rope Co., Brooklyn, N. Y.  
Acrum Tent & Awning Co., The, Akron, Ohio.  
Allied Cloth Spec., Inc., Greenville, Ohio.  
American Finishing Co., Memphis, Tenn.  
American Tent & Awning Co., San Francisco, Calif.  
American Waterproofing Co., The, Cincinnati, Ohio. (General support).  
Ames Harris Neville Co., San Francisco, Calif.  
Appleton Awning Shop, Appleton, Wis.  
Astrup Co., The, Cleveland, Ohio.  
Atlas Awning Co., St. Louis, Mo.  
Atlas Awning & Shade Co., Baltimore, Md.  
Badgley Manufacturing Co., Portland, Oreg.  
Baker-Lockwood Awning & Tent Co., Kansas City, Mo.  
Barnett, Edw. H., Cambridge, Md.  
Barnett Canvas Goods & Bag Co., Inc., Philadelphia, Pa. (General support).  
Barrell Co., Inc., William L., New York, N. Y. (General support).  
Bay Awning & Shade Co., Goose Creek, Tex.  
Beckman Co., C. E., New Bedford, Mass.  
Bemis Bro. Bag Co., St. Louis, Mo.  
Bendus Flax & Cotton Textile Co., Brooklyn, N. Y.  
Bennett, Inc., Fred S., New York, N. Y.  
Benton Harbor Awning & Tent Co., Benton Harbor, Mich.  
Better Fabrics Testing Bureau, New York, N. Y.  
Birna Manufacturing Co., Inc., Buffalo, N. Y.  
Blithe, Wesley Leshner, Philadelphia, Pa.  
Boston Textile Finishing Co., South Weymouth, Mass.  
Bouton Foster Co., Chicago, Ill.  
Bowman-Durham-Robbins, Inc., Brooklyn, N. Y.  
Boyer Awning Co., Milwaukee, Wis.  
Brampton Manufacturing Co., A. W., Oakland, Calif.  
Bronx Window Shade & Awning Co., Inc., New York, N. Y.  
Brook Tarpaulin Co., Inc., New Orleans, La.  
Brown, Geary, Philadelphia, Pa.  
Brown Co., L. S., Atlanta, Ga.  
Brunsen Co., The (Division of The H. M. Sawyer & Son Co.), East Cambridge, Mass.

Buckeye Fabric Finishing Co., The, Coshocton, Ohio.  
Buckner, H. W.—Duck, Rope & Twine, New Orleans, La.  
Buffalo, City of, Architectural Service, Division of Buildings, Department of Public Works, Buffalo, N. Y.  
Bureott Mills, Chicago, Ill.  
Burlington Mills, Inc., Burlington, Wis.  
Butler Bros., Chicago, Ill.  
Camp Fire Girls, Inc., New York, N. Y. (General support).  
Canton Tent & Awning Co., The, Canton, Ohio.  
Canvas Products, Inc., Jersey City, N. J.  
Canvas Products Co., St. Louis, Mo.  
Canvas Proofing & Striping Co., Chicago, Ill.  
Capital Awning Co., Washington, D. C.  
Capwell Co., A. A., Pawtucket, R. I.  
Carnie-Goodwin-Pendleton Co., Sacramento, Calif.  
Carolina Awning & Tent Manufacturing Co., Rocky Mount, N. C.  
Carpenter & Co., Geo. B., Chicago, Ill. (General support).  
Carpenter & Co., L. E., Wharton, N. J.  
Cedar Rapids Tent & Awning Co., Cedar Rapids, Iowa.  
Champion Canvas Supplies, St. Louis, Mo.  
Chandler Industries, Inc., Buffalo, N. Y.  
Clendenen Co., The, Dothan, Ala.  
Chilson's Shops, Northampton, Mass.  
Clifton Manufacturing Co., Waco, Tex.  
Columbus Tent & Awning Co., The, Columbus Ohio.  
Cooney Sail Co., Inc., Gloucester, Mass.  
Cooperative G. L. F. Farm Supplies, Inc., Ithaca N. Y.  
Crawford-Austin Manufacturing Co., Waco, Tex.  
Crawford Manufacturing Co., Inc., Richmond, Va.  
Crown Tent & Awning Co., Nashville, Tenn.  
Culp Awning Co., The, Cleveland, Ohio.  
Dallas Cotton Mills Co., The, Dallas, Tex.  
Danville Tent & Awning Co., Danville, Ill.  
Davis & Co., Charles C., Chicago, Ill.  
Decatur Tent & Awning Co., Decatur, Ill.  
Deering Awning & Furniture Co., Miami, Fla.  
Detroit Testing Laboratory, The, Detroit, Mich.  
Dickey Manufacturing Co., Toledo, Ohio.  
Dixie Bedding Co., Inc., Canvas Goods Department, Greensboro, N. C.  
Dougherty Bros. Tent & Awning Co., St. Louis, Mo.  
Duban Shade Corporation, The, Honeoye Falls, N. Y.  
Dubuque Awning & Tent Co., Dubuque, Iowa.  
Eaton Manufacturing Co., (Formerly Eaton Auto Top Co.), Eaton, Ohio.  
Ekroth Laboratories, Inc., Brooklyn, N. Y.  
El Paso Tent & Awning Co., El Paso, Tex.  
El Paso Testing Laboratories, El Paso, Tex.  
Esselen, Inc., Gustavus J., Boston, Mass.  
Farm Supply & Awning Co., Lake Charles, La.  
Field Corporation, J. E., Rochester, N. Y.  
Field & Co., Marshall, Chicago, Ill.  
Florida Tent & Awning Co., Jacksonville, Fla.

## FIRMS—Continued

Foster Manufacturing Co., New Orleans, La.  
 Fraser Products Co., Alpena, Mich.  
 Freeport Awning & Shade Co., Freeport, L. I., N. Y.  
 Fulton Bag & Cotton Mills, Atlanta, Ga.  
 Gainer, John W., Wilmington, Del.  
 Gosport Manufacturing Co., (Division of Indianapolis Tent & Awning Co.), Gosport, Ind.  
 Green Bay Awning & Tent Co., Green Bay, Wis.  
 Hamlin Canvas Goods Co., Oklahoma City, Okla.  
 Hansen Awning & Harness Shop, Hollister, Calif.  
 Harrington, King & Co., Boston, Mass.  
 Hatch Textile Research, New York, N. Y.  
 Hettrick Manufacturing Co., Toledo, Ohio.  
 Hibbard, Spencer, Bartlett & Co., Chicago, Ill.  
 Hirsch Weis Canvas Products Co., Portland, Oreg.  
 Hirschheimer Tent & Awning Co., La Crosse, Wis.  
 Hoegee & Sons, A., Los Angeles, Calif.  
 Hoffman Co., A., Baltimore, Md.  
 Hoigaard Co., C. J., Minneapolis, Minn.  
 Home Awning & Shade Co., Inc., Englewood, N. J.  
 Homer-Alden Co., North Attleboro, Mass.  
 Hooper & Sons Co., Wm. E., Baltimore, Md.  
 Hoosier Tarpaulin & Canvas Goods Co., Indianapolis, Ind.  
 Hudgins, Dize Co., Inc., Norfolk, Va.  
 Huff Awning Co., W. W., Vinton, Va.  
 Hulme Co., J. W., St. Paul, Minn.  
 Huntington Tent & Awning Co., Huntington, W. Va.  
 Iden & Co., Chicago, Ill.  
 Industrial Canvas Products Corporation, South Bend, Ind.  
 Illinois Division of Highways, Bureau of Materials, Springfield, Ill.  
 Indianapolis Tent & Awning Co., Indianapolis, Ind.  
 Industrial By-Products & Research Co., Philadelphia, Pa.  
 Industrial Canvas Products Corporation, South Bend, Ind.  
 Isaacs Co., John H., Buffalo, N. Y.  
 Jamaica Tent Co., Flushing, N. Y.  
 Jefferson Mills, Inc., Jefferson, Ga.  
 Johnson Co., J. W., Chicago, Ill.  
 Jones Awning Co., A. W., Oceanside, L. I., N. Y.  
 Josephson Bag Co., The, Bridgeport, Conn.  
 Joys Brothers Co., Milwaukee, Wis.  
 Kattmann Tent & Awning Co., Inc., A. F., Houston, Tex.  
 Kistler Tent & Awning Co., The, Casper, Wyo.  
 Kleiminger Manufacturing Co., Chicago, Ill.  
 Kokomo Tent & Awning Co., Kokomo, Ind.  
 Kopp Co., John W., Detroit, Mich.  
 Kronke Co., Oakland, Calif.  
 Kyle, Herbert S., Charleston, W. Va. (General support).  
 Laacke Co., R., Milwaukee, Wis.  
 Landgrebe Co., B. J., Philadelphia, Pa.  
 Larsen & Sons, I. M., Tacoma, Wash.  
 Laucks Laboratories, Inc., Seattle, Wash.  
 Lawton Tent & Awning, Lawton, Okla.  
 Lehon Co., The, Chicago, Ill.  
 Lincoln Mills of Alabama, Huntsville, Ala. (General support).  
 Lincoln Tent & Awning Co., Lincoln, Nebr.  
 Little Rock Tent & Awning Co., Little Rock, Ark.  
 Loane Brothers, Baltimore, Md.  
 Lodi Tent & Awning Co., Lodi, Calif.  
 Lukens & Igl, Inc., Milwaukee, Wis.  
 MacKenzie Awning Co., Detroit, Mich.  
 Madison Tent & Awning Co., Madison, Wis.  
 Magner & Sons, Edward, Buffalo, N. Y.  
 Maine Mills Laboratory, Lewiston, Maine.  
 Mameaux Awning & Tent Manufacturing Co., Inc., Pittsburgh, Pa.  
 Mansfield Tent & Awning Co., The, Mansfield, Ohio.  
 Mason City Tent & Awning Co., Mason City, Iowa.  
 Mathews, C. B., Sonora, Calif.  
 McClellan, Chas. P., Fall River, Mass.  
 Mid-Columbian Sports Shop, The Dalles, Oreg. (General support).  
 Milwaukee Awning & Tent Co., Milwaukee, Wis.  
 Mosser, William, San Francisco, Calif.  
 Muskegon Awning & Manufacturing Co., Muskegon, Mich.  
 New Orleans, Inc., Better Business Bureau of, New Orleans, La. (General support).  
 Nicholson & Son, Inc., Jas. A., Baltimore, Md.

## FIRMS—Continued

Norvell Awning Co., C. B., Richmond, Va.  
 O'Neil Awning & Tent Co., Columbus, Ohio.  
 Pacific Tent & Awning Co., Fresno, Calif.  
 Parker, Wilder & Co., New York, N. Y.  
 Patzig Testing Laboratories, Des Moines, Iowa.  
 Pease Co., Inc., L. F., Providence, R. I.  
 Pease Laboratories, Inc., New York, N. Y.  
 Penniman & Browne, Baltimore, Md.  
 Penney Co., J. C., New York, N. Y.  
 Peoria Tent & Awning Co., Peoria, Ill.  
 Pittsburgh, City of, Department of Supplies, Pittsburgh, Pa.  
 Pittsburgh Waterproof Co., Pittsburgh, Pa.  
 Pontiac Tent & Awning Co., Pontiac, Mich.  
 Powers & Co., Philadelphia, Pa.  
 Price Fire & Water Proofing Co., Poughkeepsie, N. Y. (General support).  
 Prince Lauten Corporation, New York, N. Y.  
 Reliable Awning Co., Billings, Mont.  
 Reliable Tent & Awning Co., Inc., Oklahoma City, Okla.  
 Rivett Co., H. W., Sacramento, Calif.  
 Robertson Co., A. L., Baltimore, Md.  
 Rose, Morton M., Philadelphia, Pa.  
 St. Joseph Tent & Awning Co., St. Joseph, Mo.  
 St. Louis, The, City of, Board of Education, St. Louis, Mo.  
 Schaefer Tent & Awning Co., The, Denver, Colo.  
 Scheverlein Guth Co., Inc., N. Bergen, N. J.  
 Schwahn-Seyberth Co., The, Eau Claire, Wis.  
 Scott Manufacturing Co., Omaha, Nebr.  
 Scott-Omaha Tent & Awning Co., Omaha, Nebr.  
 Scott Tent & Awning Co., Marshalltown, Iowa.  
 Sears, Roebuck & Co., Chicago, Ill.  
 Scranton Better Business Bureau, Inc., Scranton, Pa. (General support).  
 Simpson & Fisher, Inc., San Francisco, Calif.  
 Sioux City Tent & Awning Co., Sioux City, Iowa.  
 Smith & Adams Co., Salt Lake City, Utah.  
 Smith-Hunzinger Co., Chicago, Ill.  
 Smith Manufacturing Co., Dalton, Ga.  
 Smith Tent & Awning Co., M. D., Atlanta, Ga.  
 Snell, Inc., Foster D., Brooklyn, N. Y.  
 South Akron Awning Co., Akron, Ohio.  
 South Bend Awning Corporation, South Bend, Ind.  
 Spelman & Co., Vincent J., Philadelphia, Pa. and Brooklyn, N. Y.  
 Spiekermann Concrete Pipe Co., Ed, Canvas Department, Lodi, Calif.  
 Springfield Tent & Awning Co., Springfield, Ohio.  
 Standard Tent & Awning Co., Omaha, Nebr.  
 Star Tent & Awning Co., Detroit, Mich.  
 Stengel, Alfred W., Buffalo, N. Y.  
 Steril Manufacturing Co., Omaha, Nebr.  
 Sugar House Awning & Paint Co., Salt Lake City, Utah.  
 Sunde & d'Evers Co., Seattle, Wash.  
 Suntlet, Inc., New York, N. Y.  
 Superior Tent & Awning Co., Inc., Superior, Wis.  
 Swan Tent & Awning Co., Ludington, Mich.  
 Textile Procers, Inc., Jersey City, N. J. (General support).  
 Textile Testing & Research Laboratories, New York, N. Y.  
 Textileleather Corporation, Toledo, Ohio.  
 Thomas & Sons, Inc., Boonsboro, Md.  
 Thomas Weatherstrip Screen Co., Boonsboro, Md.  
 Thompson & Lichtner Co., Inc., The, Boston, Mass.  
 Thompson's, McAllen, Tex.  
 Thorp Awning Shoppe, Inc., The, Indianapolis, Ind.  
 Topeka Tent & Awning Co., Topeka, Kans.  
 Tower Co., A. J., Boston, Mass.  
 United States Finishing Co., The, Norwich, Conn.  
 United States Tent & Awning Co., Chicago, Ill.  
 United States Testing Co., Inc., Hoboken, N. J. (General support).  
 Victory Tent & Awning Co., Phoenix, Ariz.  
 Virginia, Commonwealth of, Division of Purchase & Printing, Richmond, Va.  
 Wagner Awning & Manufacturing Co., The, Cleveland, Ohio.  
 Wagner Manufacturing Co., Carl A., Denver, Colo.  
 Wall & Sons, H. B., Springfield, Mo.  
 Wellington Sears Co., New York, N. Y.  
 Wenzel Tent & Duck Co., H., St. Louis, Mo.  
 Western Waterproofing & Fabricating Co., Los Angeles, Calif.



## FIRMS—Continued -

Wheeling Tent & Awning Co., The, Wheeling, W. Va.  
 Wichita Ponca Tent & Awning Co., The, Wichita, Kans.  
 Wilber & Son, San Francisco, Calif.  
 Willatsen, Andrew, Seattle, Wash.  
 Willingham Cotton Mills, Macon, Ga.  
 Willis Co., Wm. N., Everett, Mass.  
 Wittenborn Co., Inc., R. G., Trenton, N. J.  
 Wolf Tent & Awning Co., Fort Wayne, Ind.  
 Woodward, Baldwin & Co., New York, N. Y. (General support.)  
 Worcester Awning Co., Worcester, Mass.  
 Youngstown Tent & Awning Co., The, Youngstown, Ohio.  
 Zamzow Manufacturing Co., St. Louis, Mo.

## U. S. GOVERNMENT

Agriculture, Department of, Washington, D. C., and Missoula, Mont.  
 Interior, Department of the, Office of Indian Affairs, Chicago, Ill.  
 Justice, Department of, Construction Division, Bureau of Prisons, Washington, D. C.  
 Justice, Department of, Federal Prison Industries, Inc., Washington, D. C.  
 National Housing Agency, Office of Administrator, Technical Division, Washington, D. C. (General support.)  
 Naval Clothing Depot, Brooklyn, N. Y. (General support.)  
 War Department, Washington, D. C.

## COMMERCIAL STANDARDS

CS No.	ITEM	CS No.
0-40.	Commercial standards and their value to business (third edition).	37-31. Steel bone plates and screws.
1-42.	Clinical thermometers (third edition).	38-32. Hospital rubber sheeting.
2-30.	Mopsticks.	39-37. Wool and part-wool blankets (second edition) (Withdrawn as commercial standard, July 14, 1941.)
3-40.	Stoddard solvent (third edition).	40-32. Surgeons' rubber gloves.
4-29.	Staple porcelain (all-clay) plumbing fixtures.	41-32. Surgeons' latex gloves.
5-46.	Pipe nipples; brass, copper, steel, and wrought iron (second edition).	42-43. Structural fiber insulating board (third edition).
6-31.	Wrought-iron pipe nipples (second edition). Superseded by CS5-46.	43-32. Grading of sulphonated oils.
7-29.	Standard weight malleable iron or steel screwed unions.	44-32. Apple wraps.
8-41.	Gage blanks (third edition).	45-45. Douglas fir plywood (sixth edition).
9-33.	Builders' template hardware (second edition).	46-40. Hosiery lengths and sizes (third edition).
10-29.	Brass pipe nipples. Superseded by CS5-46.	47-34. Marking of gold-filled and rolled-gold-plate articles other than watchcases.
11-41.	Moisture regains of cotton yarns (second edition).	48-40. Domestic burners for Pennsylvania anthracite (underfeed type) (second edition).
12-40.	Fuel oils (fifth edition).	49-34. Chip board, laminated chip board, and miscellaneous boards for bookbinding purposes.
13-44.	Dress patterns (fourth edition).	50-34. Binders board for bookbinding and other purposes.
14-43.	Boys' button-on waists, shirts, junior and sport shirts (made from woven fabrics) (third edition).	51-35. Marking articles made of silver in combination with gold.
(E) 15-43. <sup>1</sup>	Men's pajamas (made from woven fabrics) (second edition).	52-35. Mohair pile fabrics (100-percent mohair plain velvet, 100-percent mohair plain frieze, and 50-percent mohair plain frieze).
16-29.	Wall paper.	53-35. Colors and finishes for cast stone.
17-42.	Diamond core drill fittings (third edition).	54-35. Mattresses for hospitals.
18-29.	Hickory golf shafts.	55-35. Mattresses for institutions.
19-32.	Foundry patterns of wood (second edition).	56-41. Oak flooring (second edition).
20-42.	Staple vitreous china plumbing fixtures (third edition).	57-40. Book cloths, buckrams, and impregnated fabrics for bookbinding purposes except library bindings (second edition).
21-39.	Interchangeable ground-glass joints, stopcocks, and stoppers (fourth edition).	58-36. Woven elastic fabrics for use in overalls (overall elastic webbing).
22-40.	Builder's hardware (nontemplate) (second edition).	59-44. Textiles—Testing and reporting (fourth edition).
23-30.	Feldspar.	60-36. Hardwood dimension lumber.
24-43.	Screw threads and tap-drill sizes.	61-37. Wood-slat venetian blinds.
25-30.	Special screw threads. Superseded by CS24-43.	62-38. Colors for kitchen accessories.
26-30.	Aromatic red cedar closet lining.	63-38. Colors for bathroom accessories.
27-36.	Mirrors (second edition).	64-37. Walnut veneers.
28-46.	Cotton fabric tents, tarpaulins, and covers (second edition).	65-43. Methods of analysis and of reporting fiber composition of textile products (second edition).
29-31.	Staple seats for water-closet bowls.	66-38. Marking of articles made wholly or in part of platinum.
30-31.	Colors for sanitary ware.	67-38. Marking articles made of karat gold.
31-38.	Wood shingles (fourth edition).	68-38. Liquid hypochloride disinfectant, deodorant, and germicide.
32-31.	Cotton cloth for rubber and pyroxylin coating.	69-38. Pine oil disinfectant.
33-43.	Knit underwear (exclusive of rayon) (second edition).	70-41. Phenolic disinfectant (emulsifying type) (second edition) (published with CS71-41).
34-31.	Bag, case, and strap leather.	71-41. Phenolic disinfectant (soluble type) (second edition) (published with CS70-41).
35-42.	Plywood (hardwood and eastern red cedar) (second edition).	
36-33.	Fourdrinier wire cloth (second edition).	

<sup>1</sup>When "(E)" precedes the CS number, it indicates an emergency commercial standard, drafted under war conditions with a view toward early revision.

## CS No.

- 72-38. Household insecticide (liquid spray type).
- 73-45. Old growth Douglas fir standard stock doors (third edition).
- 74-39. Solid hardwood wall paneling.
- 75-42. Automatic mechanical draft oil burners designed for domestic installations (second edition).
- 76-39. Hardwood interior trim and molding.
- 77-40. Sanitary cast-iron-enameled ware.
- 78-40. Ground and polished lenses for sun glasses (second edition) (published with CS79-40).
- 79-40. Blown, drawn, and dropped lenses for sun glasses (second edition) (published with CS78-40).
- 80-41. Electric direction signal systems other than semaphore type for commercial and other vehicles subject to special motor vehicle laws (after market).
- 81-41. Adverse-weather lamps for vehicles (after market).
- 82-41. Inner-controlled spotlamps for vehicles (after market).
- 83-41. Clearance, marker, and identification lamps for vehicles (after market).
- 84-41. Electric tail lamps for vehicles (after market).
- 85-41. Electric license-plate lamps for vehicles (after market).
- 86-41. Electric stop lamps for vehicles (after market).
- 87-41. Red electric warning lanterns.
- 88-41. Liquid-burning flares.
- 89-40. Hardwood stair treads and risers.
- 90- . (Reserved for power shovels and cranes).
- 91-41. Factory-fitted Douglas fir entrance doors.
- 92-41. Cedar, cypress, and redwood tank stock lumber.
- 93-41. Portable electric drills (exclusive of high frequency).
- 94-41. Calking lead.
- 95-41. Lead pipe.
- 96-41. Lead traps and bends.
- 97-42. Electric supplementary driving and passing lamps for vehicles (after market).
- 98-42. Artists' oil paints.
- 99-42. Gas floor furnaces—gravity circulating type.
- 100-44. Porcelain-enameled steel utensils (second edition).

## CS No.

- 101-43. Flue-connected oil-burning space heaters equipped with vaporizing pot-type burners.
- 102- . (Reserved for Diesel and fuel-oil engines).
- 103-42. Cotton and rayon velour (jacquard and plain).
- 104-46. Warm-air furnaces equipped with vaporizing pot-type oil burners (second edition).
- 105-43. Mineral wool; loose, granulated, or felted form, in low-temperature installations.
- 106-44. Boys' pajama sizes (woven fabrics) (second edition).
- 107-45. Commercial electric-refrigeration condensing units (second edition).
- 108-43. Treading automobile and truck tires.
- 109-44. Solid-fuel-burning forced-air furnaces.
- 110-43. Tire repairs—vulcanized (passenger, truck, and bus tires).
- 111-43. Earthenware (vitreous-glazed) plumbing fixtures.
- 112-43. Homogeneous fiber wallboard.
- 113-44. Oil-burning floor furnaces equipped with vaporizing pot-type burners.
- 114-43. Hospital sheeting for mattress protection.
- 115-44. Porcelain-enameled tanks for domestic use.
- 116-44. Bituminized-fibre drain and sewer pipe.
- 117-44. Mineral wool; blankets, blocks, insulating cement, and pipe insulation for heated industrial equipment.
- 118-44. Marking of jewelry and novelties of silver.
- (E) 119-45. Dial indicators (for linear measurements).
- 120-44. Standard stock ponderosa pine doors.
- 121-45. Women's slip sizes (woven fabrics).
- 122-45. Western hemlock plywood.
- 123-45. Grading of diamond powder.
- (E) 124-45. Master disks.
- 125-45. Prefabricated homes.
- 126-45. Tank-mounted air compressors.
- 127-45. Self-contained mechanically refrigerated drinking water coolers.
- 128-45. Men's sport shirt sizes—woven fabrics (other than those marked with regular neckband sizes).
- 129-46. Materials for safety wearing apparel.
- 130-46. Color materials for art education in schools.
- 131-46. Industrial mineral wool products, all types—testing and reporting.
- 132-46. Hardware cloth.
- 133-46. Woven wire netting.

NOTICE.—Those interested in commercial standards with a view toward accepting them as a basis of everyday practice may secure copies of the above standards, while the supply lasts, by addressing the Division of Trade Standards, National Bureau of Standards, Washington 25, D. C.

